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| 10/057,259 | 10/25/2001 | Christopher M. Jakubiec | 2070.004400/P6601 | 2741 |

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| 7590 03/23/2005 | **EXAMINER** | |
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| Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C. | | |
| P.O. Box 398 | **ART UNIT** | **PAPER NUMBER** |
| Austin, TX 78767-0398 | 2145 | |

DATE MAILED: 03/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

| Office Action Summary | Application No. | Applicant(s) |
|---|---|---|
| | 10/057,259 | JAKUBIEC, CHRISTOPHER M. |
| | Examiner | Art Unit |
| | MINH-CHAU N. NGUYEN | 2145 |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on <u>25 October 2001</u>.

2a)☐ This action is **FINAL**.  2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
    closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) <u>1-37</u> is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-37</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

.10)☒ The drawing(s) filed on <u>25 October 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All  b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
    application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date <u>10/21/03</u>.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____ .

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 23,33 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter " setting the first timer flag when the first timer flag has not been set and setting a second timer flag when the first timer flag has been set" which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention, without undue experimentation.

2. Regarding claims 23,33, it is unclear as to what the functionality of "setting the first timer flag when the first timer flag has not been set and setting a second timer flag when the first timer flag has been set" is.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 21 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Regarding claim 21, the phrase "substantially during the previous period of the free-running timer" is unclear and vague. It is not clearly understood then meaning of in during the previous period of the free-running timer as used within the claim. The examiner will interpret "substantially during the previous period of the free-running timer" to mean "in during the previous period of the free-running timer".

5. Claims 21,31 recites the limitation "the previous period of a free-running timer" in claim 21, line 17; and claim 31, line 15. There is insufficient antecedent basis for this limitation in the claim.

## *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-4,6-9,11-21,26-31,35-37are rejected under 35 U.S.C. 103(a) as being unpatentable over Talluri e al. (Talluri) (6,014710) and Bunton et al. (Bunton) (6,374,282 B1).

7. Regarding claim 1,

Talluri teaches a scoreboard (ex. buffer) comprising a plurality of locations adapted to store messages, wherein messages comprise a first client sending a

request to a second client (ex. a first node sending a request to a second node) (Col. 3, L. 60-Col. 4, L. 15). Moreover, Talluri also teaches a device adapted to manage the plurality of messages in the buffer (ex. computer node is a device) (Col. 2, L. 5-10).

Talluri fails to teach each message has identification. However, Bunton, in the same field of endeavor, teaches a transaction has identification (ex. transaction numbers) (Col. 6, L. 55-67).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the transaction has identification, as suggested by Bunton, in the system and method for message transmission between network nodes using remote wires of Talluri, in order to provide the request transaction logic for easy to point into the register file.

8. Regarding claim 2, Talluri teaches wherein the device comprises a timer adapted to approximately synchronously compare the length of time the messages remain in the scoreboard to a predetermined latency period (Col. 17, L. 35 – Col. 19, L. 67; and Col. 16, L. 4-17). The same motivation that was utilized in claim 1, applies equally as well to claim 2.

9. Regarding claim 3, Talluri and Bunton disclose the invention substantially as claimed. Talluri teaches wherein the timer is a free-running timer (ex. TimeSent is a free-running timer) (Col. 11, L. 60-67).

10. Regarding claim 4, Talluri teaches an error message is generated and the

procedure exits with a return code of Ebusy when the TimeSent id after the

Timeout interval (Col. 17, L. 35 – Col. 19, L. 67). Talluri fails to teach the free-

running timer is a cyclical free-running timer adapted to return to a zero-point

after the predetermined latency period. However, Bunton, in the same field of

endeavor, teaches teach the free-running timer is a cyclical free-running timer

adapted to return to a zero-point after the predetermined latency period (Col. 7,

L. 8-65).

Thus, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to have incorporated the free-running timer is a cyclical free-

running timer adapted to return to a zero-point after the predetermined latency

period, as suggested by Bunton, in the system and method for message

transmission between network nodes using remote wires of Talluri, in order to

keep track of the status of a plurality of independent outstanding requests.


11. Regarding claim 6, Talluri and Bunton disclose the invention substantially as

claimed. Talluri teaches wherein the device further comprises a fill-code

generator adapted to initiate a time-out sequence (Col. 19, L. 31-55).


12. Regarding claim 7, Talluri and Bunton disclose the invention substantially as

claimed. Talluri teaches wherein the fill-code generator is adapted to initiate the

time-out sequence when the timer notifies the fill-code generator that at least one

of the messages has remained longer than the predetermined timeout interval

(Col. 17, L. 35 – Col. 19, L. 67). The same motivation that was utilized in claim 1,

applies equally as well to claim 7.

13. Regarding claim 8, Talluri and Bunton disclose the invention substantially as

claimed. Talluri teaches the fill-code generator is adapted to create a fill code and

transmit the fill code to the first client when notified that at least one of the

messages has remained in the scoreboard longer than the predetermined

latency period (ex. base on table 1, the sender/client would be notified the time-

out occurred base on the Status and Gen fields) (Col. 17, L. 35 – Col. 19, L. 67).

The same motivation that was utilized in claim 1, applies equally as well to claim

8.

14. Regarding claim 9, Talluri and Bunton disclose the invention substantially as

claimed. Talluri teaches wherein the fill-code generator is further adapted to

notify the client that a time-out occurred (ex. base on table 1, the sender/client

would be notified the time-out occurred base on the Status and Gen fields) (Col.

17, L. 35 – Col. 18, L. 67).

15. Regarding claim 11, Talluri teaches wherein the first client is at least one of a

processor, a memory (Col. 1, L. 60 – Col. 2, L. 10). However, Talluri fails to teach

the client includes an I/0 device. Bunton, in the same field of endeavor, teaches

the client includes an I/0 device (Col. 1, L. 38-Col. 2, L. 10).

Thus, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to have incorporated the client includes an I/0 device, as

suggested by Bunton, in the system and method for message transmission

between network nodes using remote wires of Talluri, in order to provide each

computer node is configured to operate in a networked environment.

16. Regarding claim 12, Talluri teaches wherein the second client is at least one of a

processor, a memory (Col. 1, L. 60 – Col. 2, L. 10). However, Talluri fails to teach

the client includes an I/0 device. Bunton, in the same field of endeavor, teaches

the client includes an I/0 device (Col. 1, L. 38-Col. 2, L. 10).

Thus, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to have incorporated the client includes an I/0 device, as

suggested by Bunton, in the system and method for message transmission

between network nodes using remote wires of Talluri, in order to provide each

computer node is configured to operate in a networked environment.

17. Regarding claim 13, an apparatus, comprising:

Talluri teaches a scoreboard (ex. buffer) comprising a plurality of locations

adapted to store messages, wherein a message comprises a first client sending a

request to a second client (ex. a first node sending a request to a second node) (Col. 3, L. 60-Col. 4, L. 15);

Talluri teaches a timer adapted to compare the length of time the messages remain in the scoreboard to a predetermined latency period (Col. 17, L. 35 – Col. 19, L. 67; and Col. 16, L. 4-17); and

Talluri teaches a fill-code generator adapted to initiate a time-out sequence when notified that at least one messages has remained in the scoreboard for substantially longer than the predetermined latency period (Col. 17, L. 35 – Col. 19, L. 67).

However, Talluri fails to teach each message has identification. However, Bunton, in the same field of endeavor, teaches a transaction has identification (ex. transaction numbers) (Col. 6, L. 55-67).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the transaction has identification, as suggested by Bunton, in the system and method for message transmission between network nodes using remote wires of Talluri, in order to provide the request transaction logic for easy to point into the register file.

18. Claims 14-16,17,18 have similar limitations as claims 3-5,8,9. Therefore, the supporting rationale of the rejection to claims 3-5,8,9 applies equally as well to claims 14-16,17,18.

19. Regarding claim 19, a method, comprising:

Talluri teaches storing at least one message in at least one of a plurality of locations in a scoreboard (ex. buffer), wherein each message comprises a first client sending a request to a second client in a system (ex. a first node sending a request to a second node) (Col. 3, L. 60-Col. 4, L. 15);

Talluri teaches timing a selected duration (Col. 17, L. 35-Col. 18, L. 65); and

Talluri teaches initiating a time-out sequence if the selected duration is substantially longer than a predetermined latency period (Col. 17, L. 35 – Col. 19, L. 67).

However, Talluri fails to teach each message has identification. However, Bunton, in the same field of endeavor, teaches a transaction has identification (ex. transaction numbers) (Col. 6, L. 55-67).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the transaction has identification, as suggested by Bunton, in the system and method for message transmission between network nodes using remote wires of Talluri, in order to provide the request transaction logic for easy to point into the register file.

20. Regarding claim 20, Talluri and Bunton disclose the invention substantially as claimed. Talluri teaches wherein timing the selected duration comprises comparing a period of a free running timer to approximately the length of time a message remains in the scoreboard (Col. 17, L. 35 – Col. 19, L. 67). The same motivation that was utilized in claim 1, applies equally as well to claim 20.

21. Regarding claim 21, Talluri and Bunton disclose the invention substantially as claimed. Talluri teaches wherein comparing comprises detecting message that have been stored in the scoreboard substantially during the period of the free-running timer. (Col. 17, L. 35 – Col. 19, L. 67). The same motivation that was utilized in claim 1, applies equally as well to claim 21.

22. Regarding claim 26, Talluri and Bunton disclose the invention substantially as claimed. Talluri teaches wherein timing the selected duration comprises comparing a period of a free-running timer to approximately the length of time since the first client sent the request (Col. 17, L. 35 – Col. 19, L. 67). The same motivation that was utilized in claim 1, applies equally as well to claim 26.

23. Regarding claim 27, Talluri and Bunton disclose the invention substantially as claimed. Talluri teaches wherein initiating a time-out sequence comprises notifying a fill-code generator that the message in at least one location has remained in the scoreboard for substantially more than one period of the free-running timer (Col. 17, L. 35 – Col. 19, L. 67). The same motivation that was utilized in claim 1, applies equally as well to claim 27.

24. Regarding claim 28, Talluri and Bunton disclose the invention substantially as claimed. Talluri teaches wherein initiating a time-out sequence further comprises generating a fill code (Col. 19, L. 31-55).

25. Regarding claim 29, Talluri and Bunton disclose the invention substantially as claimed. Talluri teaches wherein initiating a time-out sequence further comprises transmitting the fill code to the first client (ex. base on table 1, the sender/client would be notified the time-out occurred base on the Status and Gen fields) (Col. 17, L. 35 – Col. 19, L. 67).

26. Regarding claim 30, Talluri and Bunton disclose the invention substantially as claimed. Talluri teaches wherein initiating a time-out sequence further comprises notifying the first client that a time-out has occurred (ex. base on table 1, the sender/client would be notified the time-out occurred base on the Status and Gen fields) (Col. 17, L. 35 – Col. 19, L. 67).

27. Regarding claim 31, a method, comprising:

Talluri teaches storing at least one message in at least one of a plurality of locations in a scoreboard, wherein each message comprises a first client requesting data from a second client in a system (ex. a first node sending a request to a second node) (Col. 3, L. 60-Col. 4, L. 15);

detecting approximately synchronously message that have been stored in the scoreboard substantially during the period of a free-running timer approximately equal to a predetermined latency period (Col. 17, L. 35 – Col. 19, L. 67);

determining approximately synchronously when at least one of the message as been stored in the scoreboard for substantially longer than one cycle of the free-running timer (Col. 17, L. 35 – Col. 19, L. 67); and

initiating approximately synchronously a time-out sequence if the message remains in the scoreboard substantially longer than the predetermined latency period (Col. 17, L. 35 – Col. 19, L. 67).

However, Talluri fails to teach each message has identification. However, Bunton, in the same field of endeavor, teaches a transaction has identification (ex. transaction numbers) (Col. 6, L. 55-67).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the transaction has identification, as suggested by Bunton, in the system and method for message transmission between network nodes using remote wires of Talluri, in order to provide the request transaction logic for easy to point into the register file.

28. Claim 35 has similar limitations as claim 27. Therefore, the supporting rationale of the rejection to claim 27 applies equally as well to claim 35.

29. Regarding claim 36, Talluri and Bunton disclose the invention substantially as

claimed. Talluri teaches wherein initiating a time-out sequence further comprises

generating a fill code and transmitting the fill code to the first client (ex. base on

table 1, the sender/client would be notified the time-out occurred base on the

Status and Gen fields) (Col. 17, L. 35 – Col. 19, L. 67).

30. Claim 37 has similar limitations as claim 30. Therefore, the supporting rationale

of the rejection to claim 30 applies equally as well to claim 37.

31. Claims 10,22-25,32-34 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Talluri e al. (Talluri) (6,014710) and Bunton et al. (Bunton)

(6,374,282 B1) as applied to claims 1, 19 above, and further in view of Doing et

al. (6,018,759).

32. Regarding claim 10, Talluri and Bunton is relied upon for the disclosure set forth

in the previous rejection. Talluri and Bunton teach wherein the transaction

identifiers comprise a client id, a client tag. Talluri and Bunton fail to teach the

transaction identifiers comprise a first and second timer flag. However, Doing, in

the same field of endeavor, teaches transaction identifiers comprise a first and

second timer flag (ex. thread can be interpreted as transaction) (Col. 5, L. 55 –

Col. 6, L. 42).

Thus, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to have incorporated the transaction identifiers comprise a

first and second timer flag, as suggested by Doing, in the system and method for

message transmission between network nodes using remote wires of Talluri with

Bunton's teaching the method and apparatus for tracking multi-threaded system

area network traffic, in order to improve data processing system which can

reduce delays due to memory latency in a multilevel cache system utilized in

conjunction with a multithread data processing system.


33. Regarding claim 22, Talluri and Bunton is relied upon for the disclosure set forth

in the previous rejection. Talluri and Bunton teach the detecting transaction

identifiers that have been stored in the scoreboard substantially during a previous

period of the free-running timer when the free-running timer reaches a zero point

(see Bunton, Col. 7, L. 8-65). Talluri and Bunton fail to teach examining a first

timer flag when the free-running timer reaches a zero point. However, Doing, in

the same field of endeavor, teaches examining a first timer flag when the free-

running timer reaches a zero point (Col. 5, L. 55 – Col. 6, L. 42).

Thus, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to have incorporated the transaction identifiers comprise a

first and second timer flag, as suggested by Doing, in the system and method for

message transmission between network nodes using remote wires of Talluri with

Bunton's teaching the method and apparatus for tracking multi-threaded system

area network traffic, in order to improve data processing system which can reduce delays due to memory latency in a multilevel cache system utilized in conjunction with a multithread data processing system.

34. Regarding claim 23, Talluri and Bunton is relied upon for the disclosure set forth in the previous rejection. Talluri and Bunton teach the detecting transaction identifiers that have been stored in the scoreboard substantially during a previous period of the free-running timer (see Bunton, Col. 7, L. 8-65). Talluri and Bunton fail to teach wherein setting the first timer flag when the first timer flag has not been set and setting a second timer flag when the first timer flag has been set. However, Doing, in the same field of endeavor, teaches setting a second timer flag when the first timer flag has been set (Col. 5, L. 55 – Col. 6, L. 42). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the setting a second timer flag when the first timer flag has been set, as suggested by Doing, in the system and method for message transmission between network nodes using remote wires of Talluri with Bunton's teaching the method and apparatus for tracking multi-threaded system area network traffic, in order to improve data processing system which can reduce delays due to memory latency in a multilevel cache system utilized in conjunction with a multithread data processing system.

35. Regarding claim 24, Talluri and Bunton is relied upon for the disclosure set forth
in the previous rejection. Talluri and Bunton disclose determining when a
transaction identifier has been stored in the scoreboard for substantially longer
than one cycle of the free-running timer (see Bunton, Col. 7, L. 8-Col. 8, L. 22).

36. Regarding claim 25, Talluri and Bunton is relied upon for the disclosure set forth
in the previous rejection. Talluri and Bunton teach the detecting transaction
identifiers that have been stored in the scoreboard substantially longer than one
cycle of the free-running timer (see Bunton, Col. 7, L. 8-65). Talluri and Bunton
fail to teach determining if the second timer flag has been set when the free-
running timer reaches the zero point. However, Doing, in the same field of
endeavor, teaches setting a second timer flag when the first timer flag has been
set (Col. 5, L. 55 – Col. 6, L. 42).

Thus, it would have been obvious to one of ordinary skill in the art at the time the
invention was made to have incorporated the setting a second timer flag when
the first timer flag has been set, as suggested by Doing, in the system and
method for message transmission between network nodes using remote wires of
Talluri with Bunton's teaching the method and apparatus for tracking multi-
threaded system area network traffic, in order to improve data processing system
which can reduce delays due to memory latency in a multilevel cache system
utilized in conjunction with a multithread data processing system.

37. Claims 32,33,34 have similar limitations as claims 22,23,25. Therefore, the

supporting rationale of the rejection to claims 22,23,25 applies equally as well to

claims 32,33,34.

38. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Talluri e

al. (Talluri) (6,014710) as applied to claim 1 above, and further in view of Wilson

et al. (Wilson) (US 6,718,413 B1).

39. Regarding claim 5, Talluri teaches the predetermined latency period ranges (ex.

Timeout interval). Talluri fails to teach the range is approximately from 6

nanoseconds to 28 seconds. However, Wilson, in the same field of endeavor,

teaches the latency range is from 1. mu.s to 30 . mu.s (ex. it can be interpreted

as the range is with 6 nanoseconds to 28 seconds) (Col. 8, L. 25-35).

Thus, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to have incorporated the latency range is from 1. mu.s to 30 .

mu.s, as suggested by Wilson, in the system and method for message transmission

between network nodes using remote wires of Talluri, in order to reduce number of

interrupts upon completing one or more messages.

Any inquiry concerning this communication or earlier communications from the

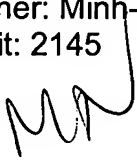examiner should be directed to MINH-CHAU N. NGUYEN whose telephone number is

(571) 272-4242.  The examiner can normally be reached on Monday-Friday from 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, VALENCIA M. WALLACE can be reached on (571) 272-6159.  The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system.  Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner: Minh-chau Nguyen
Art Unit: 2145

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TECHNOLOGY CENTER 3700